

MARSHALL STAR

Serving the Marshall Space Flight Center Community

June 3, 2010

NASA Chief Technologist Braun says Marshall's 'technical capability, innovation' vital in 2011 and beyond

By Rick Smith

In his May 27 address to the Marshall Space Flight Center work force, NASA Chief Technologist Dr. Bobby Braun spoke at length about his vision for reenergizing NASA as "a national driver in research and technology development," and clarified the vital role he anticipates Marshall will play in accomplishing the agency's goals.

"There's strong technical capability and innovation here at Marshall," he said, emphasizing that it's NASA's intent to continue to put those qualities to good use.

See Braun on page 4



NASA Chief Technologist Dr. Bobby Braun addresses the work force in Morris Auditorium.

Marshall successfully tests subscale rocket motor

By Jennifer Stanfield

Fire and sparks flew as a 24-inch-diameter solid rocket motor was successfully tested May 27 at the Marshall Space Flight Center. The 21-second firing tested a NASA subscale motor designed as a versatile, quick-turnaround and low-cost way to determine the performance of new

See Motor test on page 6

Marshall work force, retirees, families to gather June 12 for food, games, celebration

By Rick Smith

When Marshall Space Flight Center civil service employees, retirees, badged contractors and their families gather June 12 for the Marshall Employee Family Picnic, they'll enjoy food, games, live music – and their first chance this year to unite in celebration of 50 years of Marshall accomplishments.

The event will be held from 10:30 a.m. to 3 p.m. on the east side of Building 4203.

"Our Employee Family Picnic is a great way for us to celebrate the incredible contributions and sacrifices our employees have made over the last 50 years," said Marshall Center Director Robert Lightfoot. "It also gives us the opportunity to include our families, and thank them for the support they give us every day."

See Picnic on page 3

'Take Our Children to Work Day' set June 10

Kids can build space ships, float on giant hockey puck, check out rocket jet firing

By Jessica Wallace Eagan

Would your children like to build a robot?

Bring them to work June 10 for the Marshall Space Flight Center's "Take Our Children to Work Day." They'll get the chance to do that – and much more.

All team members with children in grades 3-12 are invited to participate in this event organized by the Office of Diversity & Equal Opportunity.

The day begins at 7:30 a.m. in the Building 4200 lobby, where children can pick up souvenir badges and goody bags filled with Star Wars posters and space-themed stickers, highlighters, pens, writing pads and bookmarks. Audrey Robinson, director of Diversity & Equal Opportunity, will launch the event at 8 a.m. in Morris Auditorium, presenting highlights of what's in store for kids in the day's varied activities.

Children will choose from fun and

educational projects – designing and building a lunar lander to "safely land astronauts" on the moon's surface, making their own robot with a toy motor, or maybe conducting science experiments with things commonly found at home.

Think your children would like to go for a "float"? Hitch a ride on a giant air hockey puck. Want to see Marshall engineers in action? Kids can watch them conduct a rocket jet firing. Always wanted to build a space ship...with lights? Come on out to Marshall.

They'll also learn about the principles of recycling water and air in space, how tornadoes are formed and how rain falls from the clouds.

And it doesn't stop there. McGruff the Crime Dog and members of the Huntsville Police Bike Patrol will join in on the fun. They'll teach how to prevent injuries while riding bicycles,



scooters, inline skates and skateboards. Kids can win a bike or one of several helmets to be given away.

Redstone Arsenal's fire prevention inspector will demonstrate how to stay safe during a house fire. Kids can explore a ladder truck and put out a virtual fire with a digital extinguisher unit.

And for the grand finale: a paper airplane contest! Kids and adults can participate. And if your plane flies the farthest for the longest duration through a 24-inch-diameter hula-hoop, you'll take home a ribbon.

For a complete schedule of events and other information, visit <http://eo.msfc.nasa.gov/c2w/#sched>.

To register your child, visit <http://toctwd.msfc.nasa.gov/registration.cfm>. The deadline is June 8.

Eagan, an AI Signal Research Inc. employee and the Marshall Star editor, supports the Office of Strategic Analysis & Communications.

Videos celebrating Marshall's 50th anniversary to play in Heritage Gallery throughout year

As part of the 50th anniversary of the Marshall Space Flight Center, the Marshall History Office is showing a series of videos related to the history of the center throughout the year. The films will cover Mercury-Redstone, Saturn, Skylab, Apollo, space shuttle, International Space Station and more. Each video will run for one week in the Heritage Gallery in Building 4200.

This week's film will be about Apollo 11, titled "The Eagle Has Landed."



The picnic is organized by the Office of Strategic Analysis & Communications and sponsored by the Marshall Exchange.

Picnic festivities for all ages

Meal tickets may only be purchased through administrative officers until noon on June 4. Each \$5 meal ticket is good for one plate of barbecued pork or grilled or barbecued chicken, baked beans, cole slaw, pickle, roll and a drink. Hamburgers, hot dogs, chips, water, snow cones and soft drinks will be sold separately. For those over 21, draft beer also will be available for purchase.

There will be more than a dozen free games and activities for kids, including a 36-foot-tall, inflatable space shuttle slide; bounce houses; a 135-foot "extreme obstacle course;" carnival midway-type games with prizes; water slides and more.

The picnic will include bingo in two spacious, seated tents. Bingo will cost 50 cents per card, with a maximum of two cards per player per game. Prizes will include HDTVs, digital cameras, videogame systems, Blu-ray disc players, camping equipment, mountain bikes, space vehicle models, laptop computers, gift cards and more.

Dozens of classic and exotic cars and motorcycles, owned and maintained by Marshall team members, are expected to be on display in the 4203 east parking lot. To include vehicles in the car show, contact Lou Nosenzo at 544-7401 or Rich Wegrich at 544-2626.

Three Huntsville-area musical groups featuring Marshall Center team members – The Sharon Hancock Band, Mambo Gris Gris and the Rank Strangers – will provide a variety of live country, Latin and bluegrass music throughout the day.

Numerous tents, shaded areas and misting stations will be set up throughout the area to help keep

Marshall at 50: A summer of celebration

The Marshall Center officially will turn 50 on July 1. Fifty years ago on that date, President Dwight Eisenhower visited Redstone Arsenal to formally dedicate the center – and to publicly announce the creation of the National Aeronautics and Space Administration.

This year's 50th anniversary celebration at Marshall will continue long after the last barbecue is eaten and the last bingo number called at the Marshall Employee Family Picnic on June 12.

The center will open its doors to the public Aug. 21 to showcase Marshall's critical role in America's space program – highlighting key accomplishments with a variety of exhibits, facility tours and presentations by center personnel.

Marshall also will host a team event Sept. 8 to unveil a state historic marker commemorating 50 years of Marshall Center innovation and success. The marker is part of the Alabama Department of Tourism's "2010: Alabama's Year of Small Towns and Downtowns" program to place historic markers throughout the state. Marshall was submitted as a marker candidate by the Huntsville/Madison County Convention & Visitors Bureau. The marker will be unveiled near the Redstone Arsenal Visitor's Center at Gate 9.

Additional details about the open house and historic marker unveiling will be made available in coming weeks in *The Marshall Star* and *Inside Marshall*.

Facebook users can keep up with 50th anniversary events. Search for "Marshall Space Flight Center 50th Anniversary." Updates also will appear on the main NASA Marshall page at http://www.facebook.com/nasa_marshall.



participants cool during the day.

Parking will be available in the lot south of Building 4203, and overflow parking is available across the 4200 complex. No Marshall Center buildings will be open during the event.

Next week's *Marshall Star* will include a complete map of the picnic area for easy identification of parking areas, ticket booths, activities, cooling stations and public restrooms.

Guidelines for non-badged family members

Family members arriving unescorted by a permanently badged team member must have a one-day pass prior to arrival. Team members can pick up one-day family passes at the security desk in the lobby of Building 4200 weekdays

from 8 a.m. to 3:30 p.m. through June 11. Passes should be placed on the driver's side of the windshield, and drivers must present a valid driver's license, proof of insurance and vehicle registration when arriving at a Redstone Arsenal gate.

Marshall team members who wish to attend the event with a spouse, children or grandchildren who are non-U.S. citizens must pre-coordinate their family's arrival no later than June 4. Contact Protective Services' Sherman Wilson at sherman.n.wilson@nasa.gov or Tiffany Kimbrough at tiffany.n.kimbrough@nasa.gov for more information.

Smith, an AI Signal Research Inc. employee, supports the Office of Strategic Analysis & Communications.

Braun, who since February has served as NASA's principal advisor and advocate on matters concerning agency-wide technology policy and programs, also met with Center Director Robert Lightfoot and program and project leads during his visit. In addition, he toured the Propulsion Research and Development Laboratory and other Marshall facilities. Braun has more than 20 years of experience performing design and analysis of planetary exploration systems as a member of the technical staff at NASA's Langley Research Center in Hampton, Va., and, from 2003 to early 2010, at the Georgia Institute of Technology in Atlanta, where he also taught space systems design, astrodynamics and planetary entry. He has contributed to the design, development, test and operation of several robotic spaceflight systems.

Boosting research, development

"When I think of NASA, I think of three core competencies: research and technology development; spaceflight hardware development; and mission operations," Braun told audience members during his Morris Auditorium address. "None is more important than the others, and all three are critical for a healthy NASA."

Braun said he is developing a plan to boost the first of those core competencies – to deliver results that will greatly benefit spaceflight hardware development and mission operations across NASA, as well.

"For our agency to remain at the cutting edge, we need a healthy research-and-development aspect to our program," he added.

That core competency also is a significant focus of President Barack Obama's proposed fiscal year 2011 budget, which includes a \$6-billion funding increase for NASA over five years, Braun said, adding that the increase would come at a time when many federal agency budgets are flat and discretionary federal spending is fixed.

"NASA is viewed as a player in

research and technology development," he said. "That's a very important thing. So we have to celebrate its success and foster its growth."

New technology solutions

It's the goal of the proposed new Space Technology Program, Braun said, "to prove the feasibility of novel, early stage ideas with the potential to revolutionize a future NASA mission or fulfill a national need."

Braun emphasized that NASA will not pursue these novel technologies in isolation. He said new projects will draw on the key talents and resources of academia, industry and other national and international partners. "We want to get the best ideas from wherever those ideas may be," he said.

NASA intends to use competition to find them, he said. He outlined the newly restructured Centennial Challenges program – the annual, non-government-funded series of technology and hardware development contests with large cash prizes for the best technological solutions by American entrepreneurs and developers. Previously managed at NASA Headquarters in Washington, the program will move in FY11 to the Marshall Center with a proposed budget of \$50 million over five years.

Braun said NASA also intends to launch its new Center Innovation Fund in FY11, providing "seed money for creative ideas" and enabling field centers to compete internally to decide how to invest some of its NASA technology funding.

Marshall at the forefront of human exploration

He reemphasized the critical role Marshall will play in human exploration. "The goals of our human exploration program have not changed," he said. "What has changed is the approach to accomplish [them]." As NASA pursues development of a heavy-lift launch vehicle, advanced propulsion engines and a space station emergency

return vehicle derived from the Orion crew capsule, Braun said he anticipates Marshall will remain a critical NASA resource for spaceflight and propulsion technology and hardware development.

Marshall is expected to become home to a new program office to manage a proposed \$3.1-billion, five-year effort to develop next-generation engines and propulsion technologies, he said. Marshall also will lead NASA's Robotic Exploration Precursor Program, a proposed \$3-billion, five-year challenge to identify vital destinations throughout the solar system and pave the way for eventual human exploration of other worlds.

In addition, Braun said Marshall will be home to a new program office dedicated to space technology demonstrations, as NASA invests a proposed \$1.4 billion over five years to mature crosscutting aerospace technologies that benefit NASA and other agencies.

Braun recalled the president's April 15 address to workers at NASA's Kennedy Space Center in Florida, in which he said, "I am 100 percent committed to the mission of NASA and its future, because broadening our capabilities in space will continue to serve our society in ways we can scarcely imagine."

Braun can imagine it. It's time, he said, for "people in this nation [to] once again think of NASA when they think of research and technology. It drives our nation's economic competitiveness; serves as a strong, inspiring force for young people; and it will allow us to have a more exciting future."

Braun's address will be rebroadcast on Marshall TV and Desktop TV at 10 a.m. and 2 p.m. CDT on June 4, June 7, June 9 and June 11. Visit <http://marshalltv.msfc.nasa.gov> or <http://desktoptv.msfc.nasa.gov> to watch.

For more information about NASA's technology programs and projects, visit <http://www.nasa.gov/topics/technology>.

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Asian Pacific American Heritage Month activities honor contributions, diversity

Dr. Ravindra Behari Lal, emeritus professor of physics at Alabama A&M University in Huntsville, spoke at the Marshall Space Flight Center's Asian Pacific American Heritage Month lunch-and-learn event May 26. Lal discussed the importance of diversity in the work force. He also talked about his long association with NASA and the Marshall Center, including serving as principal investigator on two space shuttle flight experiments.



Glenda Morton, a WILL Technology employee supporting Marshall's Office of Human Capital, placed first in the Team Redstone Asian Pacific American Heritage Month essay contest. She received a certificate and special coins recognizing her commitment to promoting and enhancing cross-cultural awareness and diversity throughout the community May 25 at the Team Redstone Asian Pacific Heritage Month Observance Program.

NASA Engineering and Safety Center seeks resident engineers

The NASA Engineering and Safety Center is seeking resident engineers. This one-year detail assignment is open to GS-12 and -13 civil service employees with a background in engineering. The deadline to apply is June 23.

Known as NESC, this independently funded engineering organization includes technical experts that provide objective technical assessments of critical, high-risk projects.

The temporary assignment beginning Oct. 1 provides a technically diverse learning experience for junior engineers, giving them a greater understanding of the agency's programs and projects, an enhanced ability to solve complex technical problems, improved leadership skills and an increased network of technical experts in their field of work. Resident engineers will remain at their home center, but travel is required.

For more information and job qualifications, visit Inside Marshall or http://inside.msfc.nasa.gov/announcements/nesc_re_opp.pdf.

To apply, visit <http://jobsearch.usajobs.gov/a9nasai.aspx> and type in LA10N0126 under keyword search.

For more information about NESC, visit <http://www.nasa.gov/offices/nesc/>.

For questions, contact Steve Gentz, NESC chief engineer at Marshall, at 544-1642.

Motor test *Continued from page 1*

materials and designs.

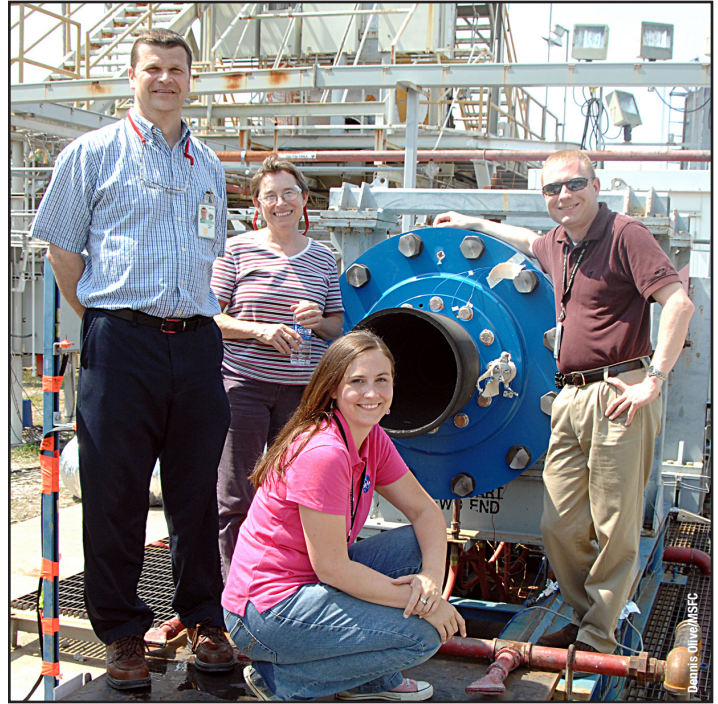
This 24-inch-diameter, 109-inch-long motor used propellant and a case reconfigured from space shuttle test equipment. The test motor's nozzle was replaced with a new design scaled from the Ares I first-stage development motor, but could also be modified to accommodate different mission profiles or different sized vehicles, including heavy-lift vehicles.

The test data will be evaluated to better understand the performance of the new nozzle configuration, processes and materials.

"A rocket's nozzle needs to be protected from the incredibly harsh environment to which it is exposed during launch," said Scott Ringel, an engineer at the Marshall Center and the design lead for this test. "A full-scale solid rocket motor's nozzle must survive a two minute launch at over 5,000-degrees Fahrenheit. We need to ensure our materials and designs can hold up, and small-scale tests like this one give us added confidence."

NASA is a unique customer for many materials and requires highly reliable systems, thoroughly tested and evaluated for human spaceflight programs. One change in the availability of a part, supplier or material can potentially impact vehicle design, flight operations and mission assurance. Finding adequate replacements involves extensive testing and qualification efforts. Testing a sub-scale version of a rocket motor is a cost-effective way to assess new materials, technologies or processes, and rapidly evaluate performance.

"We have extensive experience with thousands of materials used in the shuttle program, but many have become obsolete because of environmental concerns or industrial trends,"



In foreground is Sarah Howse, Marshall Center engineer and co-lead for the May 27 motor firing. Standing are, from left, David Jackson and Carolyn Brooks, ATK manufacturing engineers supporting Marshall's Engineering Directorate, and Scott Ringel, engineer and co-lead for the test.

added Ringel. "As new technologies drive the development of new materials, sub-scale testing ensures we can effectively replace obsolete materials with new and improved options."

The test also includes two secondary objectives.

The engineering team introduced an intentional defect

into the propellant. A small cut was placed in the propellant inner diameter to verify the analytic methodology used to determine critical flaw sizes. The team hopes to gain a better understanding for the margin for error.

In addition, NASA's Engineering and Safety Center will use data gleaned from this test to better understand the acoustics and vibration environment resulting from the rocket motor's plume.

Engineers from the Marshall Center's Engineering Directorate designed the test article with support from ATK Aerospace Systems of Huntsville.

Stanfield is a public affairs officer in the Office of Strategic Analysis & Communications.



Test firing NASA's 24-inch-diameter, 109-inch-long solid rocket motor is a versatile and efficient way to test new materials and designs.

Classified Ads

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Employee Ads — Submit Ad." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue, June 10, is 4:30 p.m. Thursday, June 3.

Miscellaneous

Marshall guitar amp, Ampeg bass amp, several effects pedals. 348-0391

Four adult Walt Disney World three-day hopper tickets, good through Dec. 31, \$840. 653-7036

Easton Sc900 Stealth CNT Youth Bat, 32/19, 2.25" barrel, \$60. 351-1754

Fiberglass forms for foam animals, deer, elk, cow, many others, \$2,000 obo. 603-1891

Camper top, 67"W x 100"L, fits Toyota T100 pickup truck, \$200. 837-9212

CKC Toy Poodle puppy, male, 7 weeks old, shots and vet checked. 714-3576

Kenmore refrigerator, side-by-side, water/ice, 26.6 cubic feet, biscuit color, \$300. 233-3548

Nintendo DSi games: Lego Star Wars Trilogy 2, Mummy 3, manuals, \$15 each obo. 975-2113

13-inch Macbook, white, 2.4GHz, 4GB memory, iLife 08, iWorks 08, \$750. 374-9050

Six-piece indoor/outdoor wicker furniture,

cushions, \$500. 503-2216

Nintendo Wii, controller, Super Mario Bros game, \$200. 698-7328

Treadmill, space saving, \$175. 880-9025

Executive-type desk, Formica wood grain top, 82" long, 36" wide, locking drawers, \$70. 837-6776

24-foot All-American brand aluminum ladder, Type 3, \$95. 655-6348

Power rack, incline/decline bench, Olympic weight set. 818-419-0211

Sonor drum set, lots of accessories, \$450. 205-394-1307

Beige microfiber couch. 859-771-0093

Playstation 3 game, Little BIG Planet, Game of the Year edition, rated E, \$35. 828-1234

Yamaha TTR230 dirt bike, less than 10 hours, \$2,500. 931-212-5191

Dining room set, 1965 Broyhill Premier SAGA

Group, table/six chairs, china cabinet, \$500. 655-5483

DBL-DR white utility cabinet, 4'X6', \$65; white oval pedestal sink/base/plumbing, \$50. 772-9629

Electric dryer, large capacity, white, \$95. 430-9774

Vehicles

2001 GMC Yukon, SLT auto ride, leather, dark green/tan interior, 140k miles, \$7,599 obo. 724-1980

2001 Harley Super Glide FXDXT, wine/black, SE pipes, 10k miles, more, \$9,000. 464-9871

1999 Mercury Grand Marquis LS Sedan, four door, white, V8, leather, 40k miles, \$6,700. 536-6262

1998 18-foot Stingray RS180 Bowrider, new 140HP, bimini covers, custom trailer, extras, \$9,500. 640-6427

Free

Eight sheets of pegboard. 653-4835

Wanted

Futon, good condition only. 895-9219

Need ride to and from Building 4601, hours negotiable, willing to pay for ride. 615-207-5465

Flat panel color monitor for child's PC, 15 inches or larger. 417-9518

Found

Bracelet, north east parking lot of Building 4601, May 11. 544-4680

Shuttle Buddies to meet June 28

The Shuttle Buddies will meet at 8:30 a.m. June 28 at Mullins Restaurant on Andrew Jackson Way. For more information, call Deemer Self at 881-7757.

Cyclists celebrate National Bike Month with two-wheeled tour of Redstone



More than 100 cycling enthusiasts put their feet to the pedals May 18 at the ninth-annual Tour de Arsenal bike ride. Participants from across Team Redstone – which includes the Marshall Space Flight Center and U.S. Army organizations on Redstone Arsenal – rode some 20 miles during the tour. The course started at the Marshall Wellness Center and followed the historical railroad route around the southern part of the arsenal, making a loop along Dodd, Buxton and Patton roads. It also featured a trip through Army Test Area 1. The ride is held each May to mark National Bike Month.

Space Exploration Celebration to be held July 16

The Space Exploration Celebration – formerly the Saturn/Apollo Reunion – will be held at the U.S. Space & Rocket Center in Huntsville on July 16.

The reunion is for those who worked in the U.S. Space Program and for citizens who support space exploration.

It will begin at 5:30 p.m. in the Davidson Center for Space Exploration with a buffet barbecue dinner that will be served until 7 p.m. A brief program on current NASA projects will follow.

Tickets are \$20 for adults and \$10 for children ages 4-12 until June 30. Children 3 years old and under are

free. Effective July 1, tickets will be \$25 for adults and \$15 for children. Those holding tickets may enter the museum as early as 2 p.m. July 16.

For ticket information and details about the event visit: http://www.spacecamp.com/store/Space_Exploration_Celebration.html.

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